

7128Q 117
HE 10.4



ecology and environment, inc.

111 WEST JACKSON BLVD., CHICAGO, ILLINOIS 60604, TEL. 312-663-9415

International Specialists in the Environment

MEMORANDUM

DATE: December 24, 1987
TO: File
FROM: O. S. Patel, C.C. Johnson and Malhotra, P.C.
SUB.: Illinois/F05-8705-110/FIL0249SA
DeBoer Landfill
ILD980902092

EPA Region 5 Records Ctr.



305315

The DeBoer Landfill is located on 35 acres of land in the third Principal Meridian in Cook County, Illinois (T.37N., R.12E., Sec. 13). The landfill is bordered by Harlem Avenue to the East, 105th street to the north and Stony Creek (Calumet feeder ditch) to the south and is in the city of Palos Hills. The site was identified to the United States Environmental Protection Agency (U.S. EPA) in the form of a Preliminary Assessment submitted by Illinois Environmental Protection Agency (IEPA).

The landfill is currently inactive and during its years of operation accepted a variety of refuse including clay, bricks, cinders, concrete sidewalk slabs, concrete curb and gutter, sand, broken asphalt pavement, wood, gravel, paper, rags, glass, old tires, tar paper and incineration ash.

A soil and foundation engineering report prepared by Soil Exploration and Engineering Company shows the waste fill to be between 10 feet and 32 feet in thickness. The report also showed that the natural material underlying the waste consisted of various sand, silt, clay, and gravel mixtures. Groundwater was encountered in the waste between depths of 2 and 16 feet below the present grade with an average depth of 8 feet.

The Chicago Ridge Landfill Company (James G. DeBoer, registered agent) owned the landfill. The facility was operated by DeBoer Brothers Inc. which was merged into Waste Management of Illinois Inc. on October 31,

1972, according to the Corporations Division of the Secretary of State. The operation of the site commenced in 1955 and ceased in February 1973. Approximately 10 years ago, James J. DeBoer donated the site to its current owner the City of Palos Hills. The city of Palos Hills is currently developing a recreation park on the site.

The site inspection conducted by the C.C. Johnson & Malhotra, P.C. Field Investigation Team (FIT) on July 16, 1987 included interviewing site representatives, conducting a site walkover, collecting six surface soil samples and taking pictures to document present site conditions. The site was not fenced and had no guarding system. In one small area of the site, open dumping of refuse was observed. During the inspection, clay fill was being hauled onto the northern portion of the site to help direct surface runoff to the south and into Stony Creek. Single family residents are contiguous with the north boundary of the landfill. The site is relatively flat and is approximately level with 105th Street. No damage to flora or fauna was observed.

Prior to landfilling, the entire site area was within the flood plain of the west branch of Stony Creek. The present grade of the majority of the site is approximately 15 feet above the creek flood plain elevation.

The contaminants that were detected in the soil samples are tabulated in Table 1. The highest concentration of contaminants found in the soil samples are listed in the following paragraphs.

The following semi-volatile organics were detected in the soil samples, phenanthrene (1.9 ppm), fluoranthene (3.5 ppm), pyrene (2.5ppm), benzo (a) anthracene (1.6 ppm), chrysene (1.7 ppm), benzo (b) fluoranthene (2.1 ppm), benzo (k) fluoranthene (1.2 ppm), benzo (a) pyrene (1.5 ppm), indeno (1,2,3-cd) pyrene (1.2 ppm), benzo (g,h,i) perylene (1.1 ppm) and 4,4'-DDD (0.35 ppm). The inorganic contaminants detected in the soil samples were aluminium (10,100 ppm), arsenic (14 ppm), barium (282 ppm), calcium (102,000 ppm), chromium (23 ppm), copper (234 ppm), iron (99,500 ppm), lead (127 ppm), magnesium (54,400 ppm), manganese (443 ppm), nickel (72 ppm), tin (26 ppm), and zinc (465 ppm).

The contaminants that were detected in the onsite soil samples but were not detected in the background soil sample are, 4,4'-DDD (0.35 ppm), barium (282 ppm), nickel (72 ppm) and tin (26 ppm).

Palos Hills and most of the communities in a three mile radius of the site obtain their drinking water from Lake Michigan. Residents of Palos Park which is southwest of the site get their drinking water from private residential wells. Most of the wells in Palos Park are obtaining water from the bedrock (limestone) aquifer. Hickory Hills which is northwest of the site gets drinking water from a 1608 feet deep municipal well.

Stony Creek is adjacent to the southern boundry of the site and discharges into the Calumet Sag Channel which is used for recreation. Groundwater flow and surface water runoff are possible migration pathways. The site is underlain by glacial deposits composed of clayey gravel, silty gravel, clayey silt and sand. The bedrock underlying the glacial deposits is limestone. Although this site is easily accessible and the final cap is incomplete, no wastes were observed that would be considered a direct contact hazard.